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**BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES**

Application Number: 10/518,443

Filing Date: July 01, 2005

Appellant(s): BRAGANCA ET AL.

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James T. Eller, Jr.  
For Appellant

**EXAMINER'S ANSWER**

This is in response to the appeal brief filed 12/8/2008 appealing from the Office action mailed 3/7/2008.

**(1) Real Party in Interest**

A statement identifying by name the real party in interest is contained in the brief.

**(2) Related Appeals and Interferences**

The examiner is not aware of any related appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

**(3) Status of Claims**

The statement of the status of claims contained in the brief is correct.

**(4) Status of Amendments After Final**

The appellant's statement of the status of amendments after final rejection contained in the brief is correct.

**(5) Summary of Claimed Subject Matter**

The summary of claimed subject matter contained in the brief is correct.

**(6) Grounds of Rejection to be Reviewed on Appeal**

The appellant's statement of the grounds of rejection to be reviewed on appeal is correct.

**(7) Claims Appendix**

The copy of the appealed claims contained in the Appendix to the brief is correct.

**(8) Evidence Relied Upon**

EP 0480483 Luciani et al. (Luciani I)

EP 0 480 483, Luciani et al. (Luciani I)

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EP 0 522 651, Luciani et al. (Luciani II)

WO 91 108 239, Neste

### **(9) Grounds of Rejection**

The following ground(s) of rejection are applicable to the appealed claims:

Claims 2-7, 9, 11-13, 15, 17-23, 25-28, 31-34, 37-51, and 53-73 are rejected under 35 U.S.C. 103(a) as being unpatentable over Luciani et al., EP 0 480 435 (hereafter referred to as Luciani I). Luciani I discloses the invention substantially as claimed (p. 2, 1. 25-44; examples). Luciani I lacks disclosure of the thermal treatment of step (g) and the washing step (h) as well as various preferred embodiments of the present dependent claims. However, washing is a conventional trivial step in order to remove excess reagents, and the "thermal treatment" is so broad as to read on merely letting a composition sit at room temperature. It would have been obvious to one of ordinary skill in the art to apply that skill to the disclosure of Luciani I with a reasonable expectation of obtaining a highly-useful method of making a catalyst component with the expected benefit of the catalyst to be usable in gas phase polymerization processes.

New claim 48 stands rejected as it is a combination of previous claims that were rejected under this reference.

New claims 49-51 are rejected as being disclosed in the reference. The reference discloses activating silica via heat treatment at 100-650°C for 1-20 hours (page 3, paragraph 2), a solid catalyst component used in the polymerization of ethylene (page 2, paragraph 3), and conducting the polymerization in the presence of activated particulate silica.

New claims 52-61 are rejected as being disclosed in the reference.

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New claims 62-64, 67, 68, 70, and 73 are rejected as these are properties of the produced polymer and applicants have not shown that the composition of the reference can not produce polymers with these properties, applicants are reminded that there are no testing facilities at the USPTO.

New claim 65 and amended claims 48, 58, and 61 using the "consisting essentially of" language does not help to overcome the rejections as applicants have not shown that any additional ingredients/limitations materially change the invention.

New claim 66 is rejected as applicants have not shown that the reference does not read on this amount of Mg.

New claims 69, 71, and 72 are rejected as they are directed to products made with the composition and do not further limit the composition itself.

Claims 2-7, 9, 11-13, 15, 17-23, 25-28, 31-34, 37-51, and 53-73 are rejected under 35 U.S.C. 103(a) as being unpatentable over Luciani et al., EP 0 522 651 (hereafter referred to as Luciani II). Luciani II discloses the invention substantially as claimed (p. 2, 1. 27 to p. 3, 1. 35; examples). Luciani II lacks disclosure of the thermal treatment of step (g) and the washing step (h) as well as various preferred embodiments of the present dependent claims. However, washing is a conventional trivial step in order to remove excess reagents, and the "thermal treatment" is so broad as to read on merely letting a composition sit at room temperature. It would have been obvious to one of ordinary skill in the art to apply that skill to the disclosure of Luciani II with a reasonable expectation of obtaining a highly-useful method of making a

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catalyst component with the expected benefit of the catalyst to be usable in gas phase polymerization processes.

New claim 48 stands rejected as it is a combination of previous claims that were rejected under this reference.

New claims 50-51 are rejected as being disclosed in the reference. The reference teaches solid catalyst component of activated particulate silica for the (co)polymerization of ethylene (abstract).

New claims 52-61 are rejected as being disclosed in the reference.

New claims 62-64, 67, 68, 70, and 73 are rejected as these are properties of the produced polymer and applicants have not shown that the composition of the reference can not produce polymers with these properties, applicants are reminded that there are no testing facilities at the USPTO.

New claim 65 and amended claims 48, 58, and 61 using the “consisting essentially of” language does not help to overcome the rejections as applicants have not shown that any additional ingredients/limitations materially change the invention.

New claim 66 is rejected as applicants have not shown that the reference does not read on this amount of Mg.

New claims 69, 71, and 72 are rejected as they are directed to products made with the composition and do not further limit the composition itself.

Claims 2-7, 9, 11-13, 15, 17-23, 25-28, 31-34, 37-51, and 53-73 are rejected under 35 U.S.C. 103(a) as being unpatentable over WO 91108239 (hereafter referred to as Neste).

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Neste discloses the invention substantially as claimed (p. 7, 1. 8-16; examples 1-13). Neste lacks disclosure of the thermal treatment and washing steps of (g) and (h) respectively. However, such steps are conventional in chemical synthesis. It would have been obvious to one of ordinary skill in the art to apply that skill to the disclosure of Neste with a reasonable expectation of obtaining a highly-useful method of making a catalyst component with the expected benefit of the catalyst to be usable in gas phase polymerization processes.

New claim 48 stands rejected as it is a combination of previous claims that were rejected under this reference.

New claims 49-51 are rejected as being disclosed in the reference. The reference teaches activation of silica to remove the OH groups by thermally treating at 150-1000°C and carrying out the polymerization in the presence of a solid, activated, particulate silica support (abstract and page 12, paragraph 2).

New claims 52-61 are rejected as being disclosed in the reference.

New claims 62-64, 67, 68, 70, and 73 are rejected as these are properties of the produced polymer and applicants have not shown that the composition of the reference can not produce polymers with these properties, applicants are reminded that there are no testing facilities at the USPTO.

New claim 65 and amended claims 48, 58, and 61 using the “consisting essentially of” language does not help to overcome the rejections as applicants have not shown that any additional ingredients/limitations materially change the invention.

New claim 66 is rejected as applicants have not shown that the reference does not read on this amount of Mg.

New claims 69, 71, and 72 are rejected as they are directed to products made with the composition and do not further limit the composition itself.

**(10) Response to Argument**

Appellants argue that the composition of the reference are outside of the claimed ranges for the amounts of titanium, the amount of magnesium and the amount of chloride, and submit table 1 to show this. This is not persuasive as the amounts are only from the specific examples of the reference and the reference is not limited to its specific examples, but is good for all that it teaches.

Appellants argue that working with a plurality of component ranges certainly argues against the obviousness of making such a rejection. This is not persuasive because 1.) Appellants have not shown that the reference can not make these claimed ranges (i.e. appellants only compare the examples, and the reference is good for all that it teaches) and 2.) There often times in catalysis are more than one range to adjust, and the skilled artisan in the chemical arts routinely manipulates more than one variable of a catalyst system.

Appellants submit table 2, in an attempt to show the unexpected results of the instant invention. This is not persuasive because as stated before the reference is not limited to the specific examples, and the appellants are required to compare the instant invention to the closest prior art, and the use of these specific examples from the references are not the closest prior art as the reference teach ranges broader than those listed in the specific examples. It is also noted that not all of the variables other than the amounts of Ti, Mg and Cl have been held constant, and

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this makes for a difficult comparison. Further the table showing these unexpected results is not fully commensurate with the scope of the claims.

Appellants argue that the xylene soluble fraction is different for the instant invention than for the references and give alleged reasons why.

1-High amount of Titanium.

It is noted that the instant invention also uses an aluminum alkyl.

2- Low amount of Ti and Mg in the present invention.

It is noted that appellants have failed to show that the reference could not meet this claimed amount of Ti and Mg.

Appellants argue that catalyst systems are sensitive to many influences and as such are unpredictable in their behavior. While this may be true process condition often affect the product as much as the specific catalyst used.

Appellants argue that Table 2 show that when arguable small changes in the catalyst composition produces results such as high bulk density, a small amount of fines and low amount of xylene solubles, all of which drastically influence economic considerations. This is not persuasive because again the appellants have not compared the closest prior art. Further when the amounts of catalyst used are doubled or tripled (i.e. see the amounts of Ti) one skilled in the art would expect there to be a difference, as these are not small changes as alleged by the appellants.



Appellants argue that they have compared Luciani I with the present invention in table 3, which shows a higher bulk density, a lower amount of fines and better comonomer insertion. This is not persuasive because again appellants have failed to compare the closest prior art.

Appellants argue that they have compared Luciani II with the present invention in table 4, which shows a higher bulk density for the instant invention. This is not persuasive because again appellants have failed to compare the closest prior art.

Appellants argue that table 5 shows the unexpected results of the instant invention. This is not persuasive because again appellants have failed to compare the closest prior art.

Appellants argue that the polymers produced by the examples of the reference show inferior properties when compared to the instant invention. This is not persuasive because again appellants have failed to compare the closest prior art.

Appellants argue that the benefits of the present invention are as follows

1- The ability of the instant invention to produce polymers with a low fraction of solubles.

It is noted that some of the examples of table 5, show the reference as being better than the instant invention.

2- The ability to achieve the catalytic composition with a simplified preparation process.

This is not persuasive as appellants have failed to show that their process is more simple than that of the references.

3- The ability to make a catalyst with low amounts of Ti and Mg.

This is not persuasive because appellants have not shown that the reference would not be capable of this.

4- Obtaining products with a high bulk density.

This is not persuasive because the few examples from the reference that have been performed by the appellants does not show that the entire invention of the reference is not capable of producing a polymer with a high bulk density.

Appellants argue that the use of an electron done such as that required by the references gives a different crystal form than that of the instant invention. This is not persuasive because 1.) The comprising language of the claims do not disallow for the use of a polar solvent, 2.) One of ordinary skill in the art will appreciate this affect and understand that the crystal form of the magnesium chloride is important to the form of the polymer produced, and be able to use solvent other than ones which would affect the crystal structure of the magnesium chloride, and understand how this could affect the polymer produced.

Appellants argue that their precipitation is at a different time and in a different method than that of the references. While this may be true, appellants have not claimed this, and the comprising language does not disallow for it.

Appellants argue that the WO 91/08239 reference uses chlorinated alkyl aluminum compounds, where the instant invention the chlorination preferably occurs through agents such as  $\text{SiCl}_4$ . This is not persuasive because the only claim teaching the reducing agent in the instant invention does not differentiate between  $\text{SiCl}_4$  and chlorinated alkyl aluminums (see claim 15).

Appellants continually refer to tables to show unexpected results and the differences between the instant invention and that of the references. While these tables do appear to show better results with respect to the bulk density, they are both not fully commensurate with the scope of the claims (i.e. we can not see if the range of the invention is better than that of the references or just the part that has been compared), and the tables do not compare the closest prior art (i.e. the reference disclose ranges but appellants have chosen to only compare the specific examples, and appellants are reminded that a reference is good for all that it teaches).

Appellants argue that Graphic 1, further shows the superiority of the instant invention. This is not persuasive because it can not be seen what the differences are in graphic 1, nor is it understood why this would be of importance.

Appellants argue the main contributions of the present invention are:

1- Achieve a catalytic composition with low levels of titanium and without the use of a polar solvent acting as an electron donor, making the process easier and less costly, since there is not need to add or remove this product;

This is not persuasive because 1.) The appellants have not shown that the references are not capable of using low amounts of titanium, appellants are again reminded that the references are good for all that they teach and are not limited to the preferred embodiments, 2.) The comprising language of the claims do not disallow for the use of a polar solvent, and 3.) Appellants have not shown that it would not have been within the level of ordinary skill in the art for one to use a solvent that is not polar.

2-Achieve a catalytic composition with a crystalline structure different from the prior art, even if the polar solvent is removed in the process of the prior art references;

This is not persuasive because 1.) appellants are not claiming a specific structure and 2.) appellants have not shown that it would not be within the level of skill of the ordinary one in the art to use a different solvent to make a different structure, as the structure is known to affect the polymer produced.

3- Achieve a LLDEPE product with XS lower than 10 %wt, which is needed to achieve better process performance without the risk of “chunks” formation.

This is not persuasive because the references can achieve this (see table 5).

4- Achieve a LLDEPE product with XS lower than 10 %wt, which is a requirement for obtaining films without blocking and, as a consequence, superior transparency properties;

This is not persuasive because the references can achieve this (see table 5).

5-Achieve a good product performance with XS lower than 10 % wt for films which have as an application the automatic packaging of grains, which represents a big volume in the Brazilian market.

This is not persuasive because the reference can achieve this XS limitation (see table 5), and a big volume in the Brazilian market, is not a sufficient showing of market share or commercial success.

Appellants argue that table 7 shows that the Ti/Mg ratio used in the preparation is not necessarily the Ti/Mg ratio in the final product. While this may be true table 7 does not compare all the different catalyst, and further table 7 shows that the amounts of Ti, Mg, Cl, and their ratios in the reference can read on that of the instant invention.

Appellants argue that in their declaration they have shown that the reference produce different polymers than the instant invention. This is not persuasive because as stated above the declarations are not fully commensurate in scope and do not compare the closest prior art. Further we can see in table 7 that the amounts of ingredients in the references and the instant invention can overlap, however the comparative examples used amounts that were greatly different for the reference than for the instant invention, and the skilled artisan would readily appreciate that this would also greatly affect the polymer produced.

Appellants argue that the examiner allegation that the declaration does not show that the results of the invention are always superior to the references is erroneous because from time to

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time one or more examples may not quite perform in the same manner as most examples relied upon in the declaration. This is not persuasive and it is the examiners opinion that this is not the case, as the examples of the declaration do not show the upper and lower limits of the ranges or that these ranges are critical, and further it does not compare these with what would be the closest prior art. While it may be the opinion of the appellants that the examples are the closest prior art, this is erroneous if the references teaches a broader disclosure than what is shown in the specific examples, and appellants are reminded that a reference is good for all that it teaches and is not limited to the specific examples, therefore if the disclosure teaches what would be a better comparison than the examples, then the examples can not be described as the closest prior art.

Appellants argue that the examiner argued at the interview that the amounts of catalyst components using the ranges of the Ti/Mg solutions from step (a) of Luciani I and step (ii) from Luciani II, this cannot be done because the catalyst synthesis involves different kinds of unit operations, such as for example, filtration, decantation, multiple washings and the like which would make a calculation substantially impossible. While this may be true that it is not possible to exactly calculate the amounts or ratios of the ingredients in the final product, table 7 clearly shows that the amounts of these ingredients and their ratios of the references can indeed overlap with those of the instant invention, which is what the examiner was trying to argue during the interview, and even if the examiner was technically incorrect appellants themselves have proven that the composition of the references can overlap with that of the instant invention. Further it is noted that examples 11 and 12 of the instant application were used for comparison, however table 7 fails to show these examples.

Appellants argue that the examiner is wrong in stating the declaration is not persuasive because the few examples are all polymerized the same way, except for the amounts of and ratios of Ti, Mg, and Cl. This is not persuasive because appellants have never changed the amounts of ingredients in their catalyst for comparison, however the claims recite a broad ranges for these ingredients.

Appellants argue that while there is some overlap there is more no overlap between the reference and the instant invention. This is not persuasive because the overlap appellants are referencing is from the examples and not from the whole disclosure of the references.

**(11) Related Proceeding(s) Appendix**

No decision rendered by a court or the Board is identified by the examiner in the Related Appeals and Interferences section of this examiner's answer.

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

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